Welcome to sPHENIX Heavy Flavor Jet Topical Group

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TG news

- Meeting organization
  - Use weekly simulation/detector meetings for updates, as many high-priority tasks involve software developments with tracking detector designs
  - Goal oriented irregular events:
    - Past: Init TG meeting on Apr 22
    - Next: First workfest on May 16-17
  - Email list: https://lists.bnl.gov/mailman/listinfo/sphenix-hf-jets-l
- Heavy Flavor Jet Pre-Collaboration Meeting/Workfest
  - May 16 – 17 (Mon-Tue) @ BNL Physics 2-160
  - Goals:
    - Advance the status of the tracking software tools needed to properly simulate heavy flavor jets in sPHENIX
    - Finalize a response to the ALD charge
  - Preliminary agenda, registration: https://indico.bnl.gov/conferenceDisplay.py?confId=2077
    - Mon morning: TG update, task update
    - Mon afternoon: tutorial, work session
    - Tue: work sessions, quick report sessions
  - Please join! No matter whether you have worked sPHENIX software, plenty opportunities

Longer-term tasks

- Goal: realistic study of HF jet performance in sPHENIX simulation and reconstruction
- High priority development tasks:
  - Realistic implementation in Geant4
    - Tony F./Gaku M./Chris P., lots of progress
  - Generalized Kalman filter
    - Haiwang Y./Chris P., close to completion
  - Multi-vertexing/B-tagging via secondary vertexing in jet
    - Sanghoon L./Haiwang Y.: exploring RAVE option
  - B-jet tagging: Track Counting
    - Dennis P.: lots of progress in past weeks
  - B-jet tagging: Soft Lepton Tagging
    - Jin H. (+ Help)
  - B-jet tagging: B-Meson Tagging
    - Volunteer needed!

Tasks for response to ALD charge

- HF-jet tagging heavily relying on DCA capability. Not all scenario require simulation.
- Specific simulation tasks for next two weeks as part of response to ALD charge:
- DCA counting B-tagging efficiency
  - Mike M.: Tracker-only simulation in G4 for few scenarios (the ideal MIE, realistic efficiency MAPS, realistic efficiency VTX)
  - Dennis P: Fast simulation to produce a purity vs efficiency curve
  - Construct a statement
- Soft lepton tagging with electron near jets
  - Jin: Geant4 parameterized electron-ID performance in two EMCal scenarios
  - Explore in fast simulation